

REMARKS

The Applicants appreciate the Examiner's careful examination of this case. Reconsideration and re-examination are respectfully requested in view of the instant remarks.

The status as set out in paragraph 1 of the Office Action is agreed.

With regard to paragraph 2 of the Office Action, the Applicants were obliged to the Examiner for withdrawing the objection to the Abstract.

With regard to paragraphs 3 and 4 of the Office Action, the Examiner is rejecting claims 11 - 18 over Gwynn (US 6,259,429) in view of Richards et al US 5,694,533.

The Examiner states that Gwynn teaches a multi-channel image display device see Col. 1 lines 4, 5.

It is agreed that Gwynn teaches multi-channel image display apparatus. Multi-channel image display apparatus is well known. Each channel in multi-channel image display apparatus is defined as a separate image display apparatus such for example as a projector.

The multi-channel image display apparatus disclosed by Gwynn is image display apparatus comprising two or more projectors whose images are butted or overlapped to form a single large continuous image.

The source channels of the present Blackham et al invention are each a source of video data. A discrete channel of video data for example supplied by

a computer image generator which is then displayed on multi-channel image display apparatus.

The Examiner goes on to state that:

"Gwynn fails to teach at least two low frame rate source channels for forming a background scene, at least one high frame rate source channel and the high speed real-time image processing^{electronic} means which inserts the high frame channel image onto the background scene enables an image from high frame rate source channel to be inserted at any location in the background."

The Examiner agrees that Gwynn does not disclose the present Blackham et al invention.

However, the Examiner cites Richards et al and says that the Applicants' invention is obvious over Gwynn in view of Richards et al. The Applicants have had difficulty in following the Examiner's arguments and reasoning.

The Examiner states that Richards et al teaches:

".....at least two low frame rate source....."

Col. 2 Lines 30-32, Lines 47-54 does confirm that the backdrop data is background image, and Col. 4 Lines 35-37 does describe how the backdrop data is stored.

Col.11, Lines 7-10 states that the background image is essentially passive. It does not mention frame rates. A passive image in this case is taken to be a still image. Also the background image is specific image data taken from a location which relates to a location in which a building is proposed to be positioned. If the location of the building is changed, new background image data will need to be obtained.

"..... channels for forming a background scene"

Col. 5, Lines 51-59 describes the digital effects apparatus as being a dual channel device in the sense that each of the current and previous images can be manipulated side by side. The current and previous images are both from the same source, the stored backdrop data, this being a single source.

"..... at least one high frame rate source channel....."

Col 16, Lines 14-16 is not included in the citation. Figure 3 does not specifically indicate a high frame rate source channel.

".....and the high speed real-time image processing electronic means which inserts the high frame channel image onto the background scene enables an image from high frame rate source channel to be inserted at any location in the background scene..... "

Col. 6, Lines 11-22, Col. 8, Lines 13-16 and Col 10, Lines 40-46 and 55-59 make no reference to the relative frame rates of the background and foreground images, and describe mainly the compositing of the image.

The Examiner states that it would be obvious to one skilled in the art to modify Gwynn with Richards et al and cites Col. 2. Lines 22-34 of Richards et al.

At no point in the summary of the invention does Richards et al make a reference to the frame rates or the relative frame rates of video data. The only reference made to anything which could be associated with video data frame rates is included in column 11, lines 14-16, in which Richards et al states:

"The foreground, background (and where appropriate mid-ground) images can be updated at an appropriate rate and in real time to simulate real-time moving scenes."

This indicates that the foreground, background and mid-ground images are not updated at different frame rates but at the same frame rate.

The invention disclosed by Richards et al is to use a video camera to provide the background image data to reduce the computing power needed to produce the overall image.

Column 4, lines 17-18, states "A backdrop is produced from images captured from a camera....."

Column 5, lines 3-6, states "Preferably the backdrop is acquired by shooting a number of still video pictures forming a complete 360° view of the intended site of the building."

These still images are pre-processed by the apparatus shown in Figure 3. Therefore the backdrop image data is formed by a series of still images or indeed by a single panoramic image, column 6, Lines 6-10, and therefore does not have a frame rate as it is a still image.

The backdrop image is therefore not a video image but is a still, passive image configured such that it can be viewed from different viewpoints.

For each overall image frame displayed by the apparatus of Richards et al, the backdrop data will have the same frame rate as the foreground data. Even although the backdrop data is a still image, it will be updated at every frame of the display as it will need to be updated at the same time and rate as the foreground image.

This clearly does not disclose the image of the present Blackham et al invention in which at least two separate low frame rate source channels provide the background video information. Each of these source channels is an output channel from a computer image generator. Each of these source channels provides video information which will be shown on a separate area of the multi-channel image display apparatus. Each of these source channels and the high frame rate source channel are independent video outputs from the computer image generator. The video information from these source channels is combined in accordance with the present Blackham et al invention, and is

displayed on multi-channel image display apparatus. Each channel of the multi-channel image display apparatus is a discrete channel of image display apparatus, for example a projector and is not the same "channel" as the source channels.

The Examiner argues that Richards et al teaches that the frame rates are synchronized. The backdrop image is a still image. The frame rates are therefore not synchronised in Richards et al.

The Examiner argues that the foreground image disclosed by Richards et al is a high frame rate image, and is able to provide partial frames. Richards et al at Col. 11, lines 10-12 states:

"However the merging of the foreground image with the selected portion of the background images is performed in the controller,....."

This clearly identifies the invention of Richards et al as showing only a portion of the background image, which is the still image in this instance. It is clear that only a portion of the background image can be shown at one time as the background image is a panoramic 360° view around the foreground image and it is not possible to view this entire background image at any one time. The foreground image of Richards et al is always positioned at the centre of the background image. This background image is described by a hemisphere with the foreground image at the centre, (see Figure 1).

With respect to a head slaved display device, these are well known in the simulation industry. This is not a key feature of the present invention, but may be used with the present invention to provide improved multi-channel image display apparatus.

Gwynn and Richards et al do not disclose the invention of the present application. Modifying Gwynn in view of Richards et al would not produce the invention of the present application.

With regard to paragraph 5 of the Office Action, the Applicant's Response as above is believed to deal with the new ground(s) of rejection. More specifically, claim 11 is believed to be allowable for the reasons given in detail above. Claims 12 – 18 are believed to be allowable because they include all of the features of claim 11, and claim 11 is believed to be allowable as stated. Insofar as the Examiner has also mentioned Mino et al (US 5,900,566) Qu et al (US 5,337,096) and Ashbey (US 5,636,036) these patents are not believed to affect the above submissions, nor the allowability of all of the claims 11 – 18.

With regard to paragraph 6 of the Office Action, the prior art made of record and not relied upon by the Examiner has been carefully considered. It is not believed to affect the allowability of the claims, nor the above submissions.

Accordingly, it is respectfully submitted that this application is in condition for allowance. Early and favorable action is respectfully requested.

If for any reason this **RESPONSE** is found to be **INCOMPLETE**, or if at any time it appears that a **TELEPHONE CONFERENCE** with Counsel would help advance prosecution, please telephone the undersigned or one of his associates, collect in Waltham, Massachusetts, at (781) 890-5678.

Respectfully submitted,



Thomas E. Thompson, Jr.
Reg. No. 47,136